

APPENDIX I

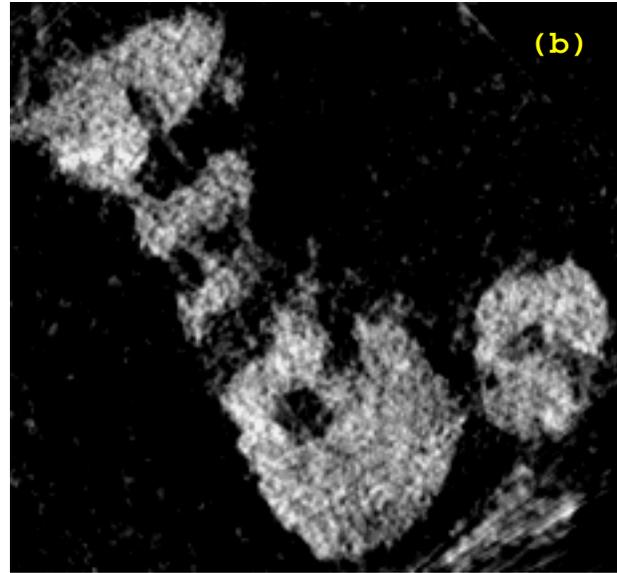
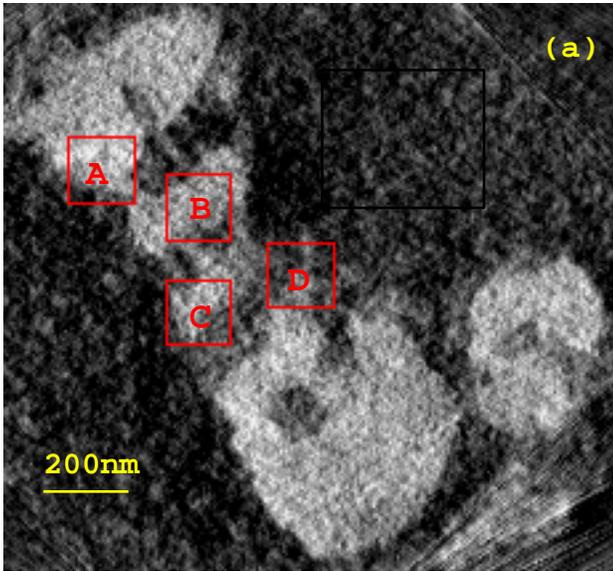


Fig. 1 - (a) A 2D section of the chromosome image. The black box shows the area where only biological noise is found. (b) The same image after applying a 3D mean filter (with a 3x3x3 kernel) and changing the gray level scale.

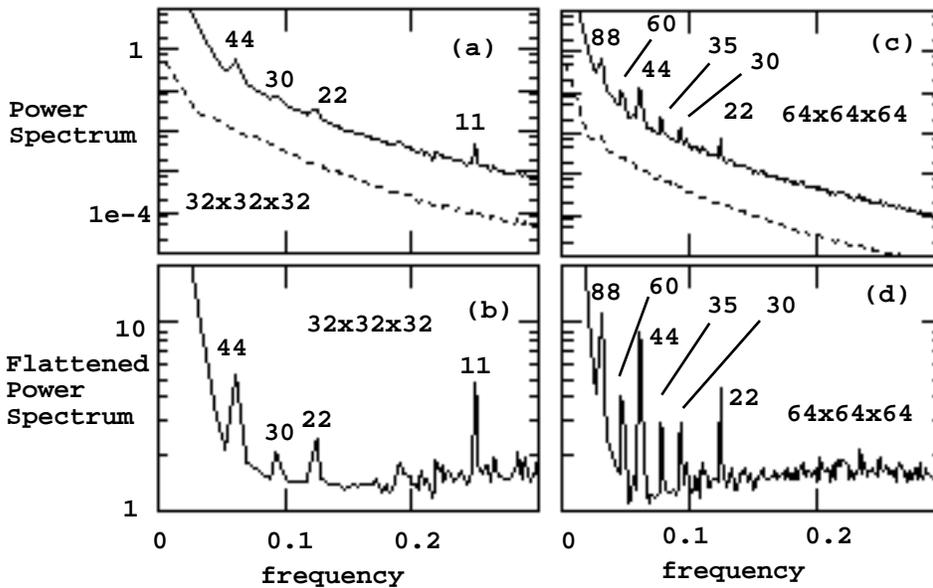


Fig. 2 - (a) Average of the radially integrated power spectrum over boxes of 32x32x32 pixels in regions where only the chromosome is found (solid line) and in regions where only biological noise exists (dashed line). For clarification, we have displaced the control dashed line by one order of magnitude down in the vertical direction. The numbers close to the peaks in the solid line represent the lengths in nanometers of the periodic structures associated with them. No peaks are seen in the noise curve. (b) Division of the radially integrated power spectrum by a polynomial that fits the noise curve, to better show the peaks in the chromosome curve. (c) and (d) the same as (a) and (b) for boxes of 64x64x64 pixels. In this case, the peak at 11nm is not seen because the periodic structures are correlated only in a short range scale. Lack of resolution at low frequencies prevents the appearance of some peaks in boxes of 32x32x32 pixels.

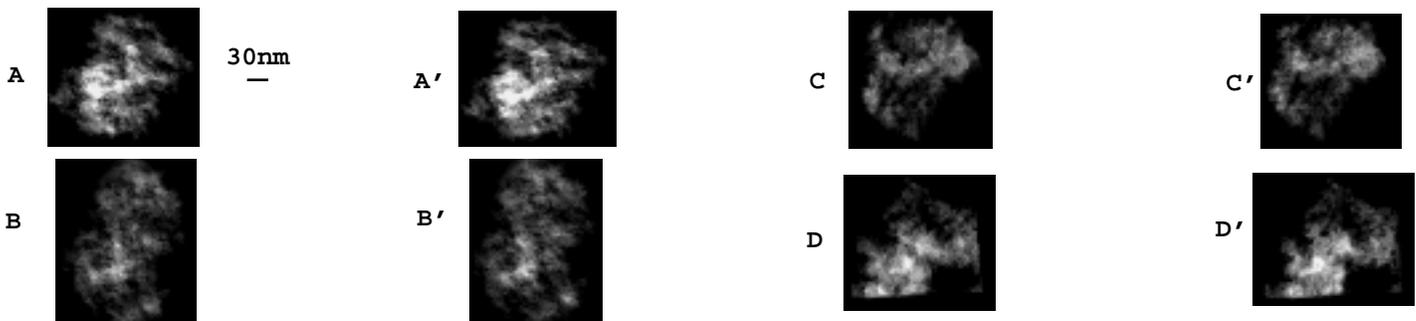


Fig. 3 - Stereo pairs associated with the red boxes of 50x50 pixels shown in Fig. 1(a) (the number of pixels in the z direction is 46) obtained using the region growing method of segmentation. These images have been rotated and projected in 2D.